Notice of Allowability	Application No.	Applicant(s)	
	10/539,272	HANSCH ET AL.	
	Examiner	Art Unit	
	Erica E. Cadugan	3722	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *dkt no. H0075.70105US00 filed 5/10/06 and interview of 1/07*.

2. ☒ The allowed claim(s) is/are *12-21*.

3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☒ All b) ☐ Some* c) ☐ None of the:
      1. ☒ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date 5/10/06
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. William McClellan on January 18, 2007.

The application has been amended as follows:

The abstract has been amended as follows:

ABSTRACT

The invention relates to a machine tool, in particular to cutting machine tools. The inventive machine tool comprises at least two machining modules provided with at least one spindle with a horizontally oriented axis and at least one clamping module having a tooling surface for at least one part which is horizontally oriented and rotatable around a vertical axis. The clamping module includes [means] structure for a rigid coupling thereof to the machining module. One or several clamping modules and/or machining modules are provided with at least one fictive midplane which is parallel with respect to the spindle axis. The machine tool also includes at least one pallet changing module which is connected to the clamping module asymmetrically with respect to the midplane.

In the specification, on page 2, the last paragraph on the page (beginning "[T]his object is solved by...") has been deleted.

In the specification, on page 4, the paragraph beginning "[A]dvantageous embodiments are..." has been deleted.

Claims 1-11. (canceled)

Claim 12 (Currently Amended). A machine tool for the machining of workpieces, comprising:

two machining modules each having at least one spindle with a horizontally oriented spindle axis;

at least one clamping module with a horizontally oriented clamping surface that is rotatable around a vertical axis and that is intended for at least one workpiece, said clamping module being configured for rigid coupling to said machining modules and said at least one clamping module and each of said machining modules having an imaginary mid-plane parallel to the spindle-axis direction;

said machining modules being connected to said clamping module so that the spindle axes of the two machining modules are non-parallel; and

at least one turntable pallet changing module, said at least one pallet changing module having a rotation axis being in an off-center position relative to each of the imaginary mid-planes which each extend parallel to the spindle axes, and said at least one pallet changing module being coupled to said clamping module asymmetrically with respect to the mid-planes.

Claim 13 (Currently Amended). The machine tool according to claim 12, wherein said at least one clamping module is essentially cuboid and said at least one pallet changing module is coupled to said at least one clamping module in such an off-center manner as to project over a maximum of two [of the] vertically oriented lateral faces of the cuboid.

Claim 14 (Currently Amended). The machine tool according to claim 12, wherein said at least one pallet changing module is coupled at an angle of 45° relative to the mid-planes of the machining modules.

Claim 15 (Currently Amended). The machine tool according to claim 12, wherein said at least one clamping module has vertically extending end faces, and said at least one pallet changing module is positioned such as to be essentially in the region of that point of intersection of two of the vertically extending end faces of the at least one clamping module at which no machining module is provided.

Claim 16 (Currently Amended). The machine tool according to claim 12, wherein at least one of said machining modules is designed as a triaxial machining unit.

Claim 17 (Currently Amended). The machine tool according to claim 12, wherein at least one of said machining modules comprises at least one tool magazine.

Claim 18 (Currently Amended). The machine tool according to claim 12, wherein said at least one clamping module [is] includes a turntable.

Claim 19 (Currently Amended). The machine tool according to claim 12, wherein said at least one pallet changing module is adapted to receive at least two pallets.

Claim 20 (Currently Amended). The machine tool according to claim 12, wherein said at least one turntable pallet changing module is designed as a turntable having a rotation axis parallel to the rotation axis of the at least one clamping module.

Claim 21 (Currently Amended). The machine tool according to claim 12, wherein said machining modules are connected to said at least one clamping module such that their respective spindle axes are at an angle of 90° relative to one another.

2. The following is an examiner's statement of reasons for allowance:

Firstly, regarding the references cited on the search report for the international application of which the present case is the national stage application:

EP 908269 (hereinafter '269) teaches a machine tool for the machining of workpieces including two machining modules each having at least one spindle (labeled 9 and 10 in Figures 1-2, for example), each having a horizontally oriented spindle axis (labeled in Figure 2 as 29). '269 does include a pallet changing module, rotating about the axis labeled in Figure 2 as 16 to exchange pallets 23, which pallet changing module is in an "off-center position relative to each of the imaginary mid-planes which extend parallel to the spindle axis".

However, it is noted that in '269, the spindle axes 29 extend in the same direction, and thus, '269 does not teach that "said machining modules being connected to said clamping module so that the spindle axes of the two machining modules are non-parallel".

Thus, for at least this reasoning, '269 does not anticipate the present invention as set forth in independent claim 12.

Additionally, even assuming arguendo that there is some teaching and motivation to re-orient one of the spindles such that the spindle axes are "non-parallel" as claimed, it is unclear what affect this reorientation of the spindles would have on the location of the pallet-changing module, and thus, to arrive at the presently-claimed orientation of the rotation axis of the pallet changing module in "an off-center position relative to each of the mid-planes which each extend parallel to the spindle axes" or the present limitation of "said at least one pallet changing module being coupled to said clamping module asymmetrically with respect to the mid-planes", improper hindsight reconstruction would be necessary. Thus, for at least this reasoning, it would

not have been obvious to one having ordinary skill in the art to have modified the teachings of '269 to have arrived at the presently-claimed invention as set forth in independent claim 12.

Regarding the other reference cited on the search report, JP 2003-340673 ('673), it is noted that '673 only teaches a single spindle (at 4 in Figure 1), and thus does not teach "two machining modules each having at least one spindle with a horizontally oriented spindle axis".

Furthermore, even assuming arguendo that there is some teaching or motivation to modify '673 such that a second machining module and spindle are added, it is noted that independent claim 12 sets forth specific relative orientations of the two spindle axes relative to one another, and specific orientations of the pallet changing module relative to imaginary mid-planes of the machining modules having the spindles, and that to arrive at such orientations as claimed (i.e., "said machining modules being connected to said clamping module so that the spindle axes of the two machining modules are non-parallel" and "said at least one pallet changing module having a rotation axis being in an off-center position relative to each of the imaginary mid-planes which each extend parallel to the spindle axes, and said at least one pallet changing module being coupled to said clamping module asymmetrically with respect to the mid-planes") would involve improper hindsight reconstruction.

Thus, for at least the foregoing reasoning, JP '673 does not render obvious the present invention as set forth in independent claim 12.

Also, regarding art exemplified by U.S. Pat. No. 2,271,848 to Tcimpidis ('848), '848 teaches a machine tool for the machining of workpieces including multiple machining modules (including the base portions 23 and the machine tools mounted thereon, see Figures 1-3) each having a spindle 13, 16, 19, 23, etc., having a horizontal spindle rotation axis (see Figures 1-3,

and page 2, left column, at least lines 12-42, for example). Note that the spindle rotation axes are non-parallel to one another as viewed in Figure 2, for example.

Additionally, '848 teaches a "clamping module" (including at least 24 and 10, see Figures 1-3, for example) having a horizontally oriented clamping surface (on the top of 10, see Figure 3, for example) for clamping workpieces (via work clamping fixtures 25, see page 2, left column, lines 12-18, for example) and that is rotatable around a vertical axis (see Figures 1-3, page 2, left column, lines 51-75, for example).

However, '848 teaches that the workpieces are loaded and unloaded from the worktable 10 of the clamping module manually by an operator (see page 2, left column, lines 43-51, for example) rather than by any "pallet changing module".

That being said, firstly, it is noted that the workpieces placed into the work clamping fixtures 25 of the clamping module do not appear to be palletized such that any "pallet changing module" would be used.

Even assuming arguendo that it would be obvious to modify the teachings of '848 such that palletized workpieces were used/exchanged, it is noted that '848 does not explicitly teach where the manual loading/unloading occurs. Below is a reproduction of Figure 2 with various possible manual workpiece loading/unloading locations labeled, noting that the workpiece can be removed at any point during the process, depending upon how many of the machining stations it is desired for it to pass through.

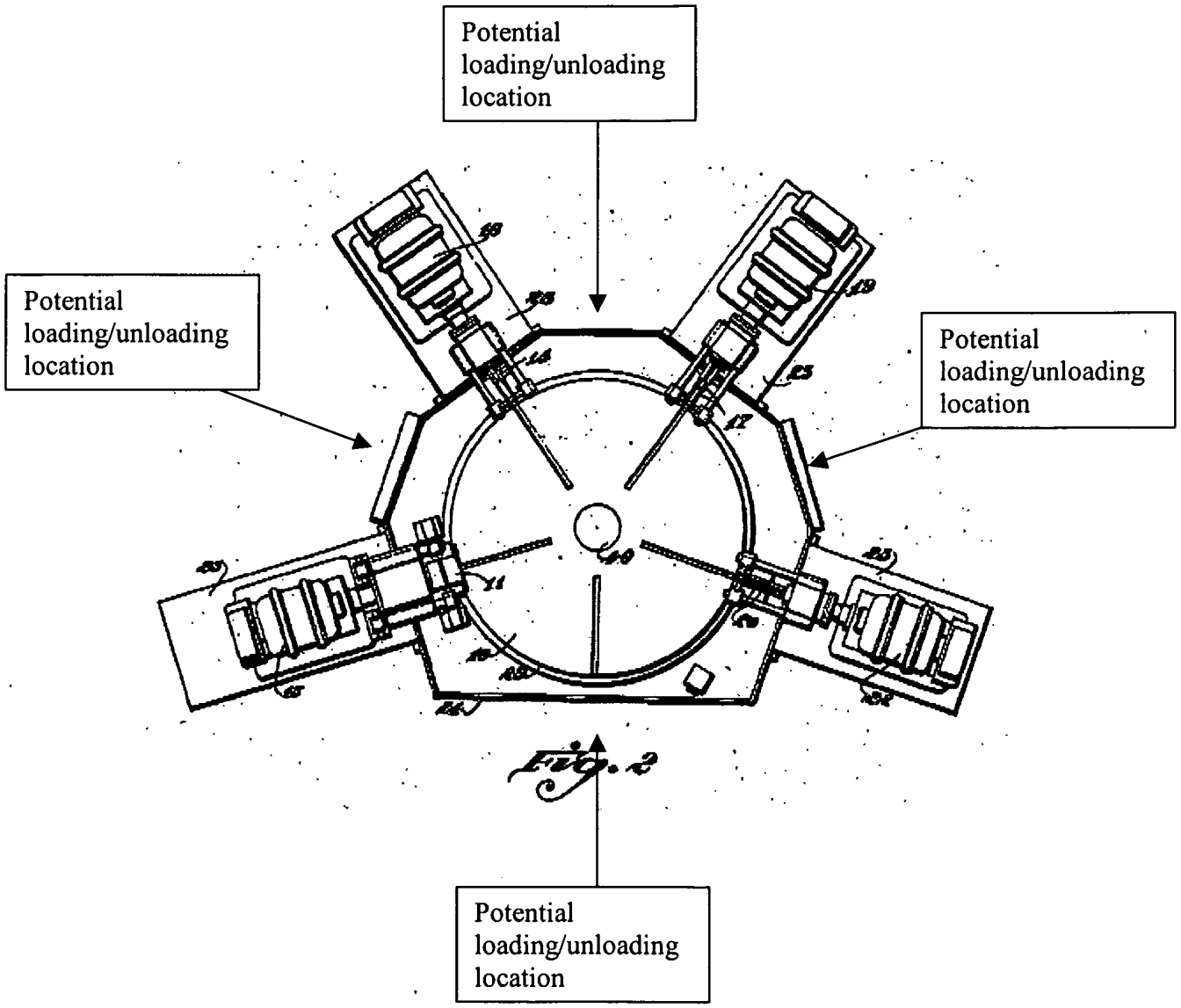

Fig. 2

It is noted that even assuming arguendo that it would have been obvious to have provided some sort of "turntable pallet changing module" (which itself is debatable), it is noted that determining the precise location and placement of such a turntable pallet changing module such that the rotation axis thereof was "in an off-center position relative to each of the imaginary mid-planes which each extend parallel to the spindle axes" and such that the at least one pallet changing module is "coupled to said clamping module asymmetrically with respect to the mid-

planes" would involve improper hindsight reconstruction. Note that it is not inherent that the mere addition of a turntable pallet changing module would result in the rotation axis thereof being in an off-center position relative to each of the imaginary mid-planes or in such module being coupled to the clamping module asymmetrically with respect to the mid-planes (noting that several of the potential locations labeled above for a pallet changing module are aligned with at a spindle axis, for example, and that some of these locations, such as the upper and lower ones, are not necessarily "asymmetric" with respect to the mid-planes of 16 and 19, or 13 and 22, for example).

Thus, for at least the foregoing reasoning, '848 neither anticipates nor renders obvious the present invention as set forth in independent claim 12.

The aforedescribed prior art being representative of the closest prior art of record, for at least the foregoing reasoning, the prior art of record neither anticipates nor renders obvious the present invention as set forth in independent claim 12.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erica E. Cadugan whose telephone number is (571) 272-4474. The examiner can normally be reached on M-F, 6:30 a.m. to 4:00 p.m., alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Monica S. Carter can be reached on (571) 272-4475. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Erica E Cadugan
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eec
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